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			BRINEY III, WALTER F	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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		Application No.	Applicant(s)			
•		10/749,133	PREVES ET AL.			
	Office Action Summary	Examiner	Art Unit			
		Walter F. Briney III	2615			
. <u> </u>	The MAILING DATE of this communication app					
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WHIC - Exter after - If NO - Failu Any r	ORTENED STATUTORY PERIOD FOR REPLY CHEVER IS LONGER, FROM THE MAILING DATE of time may be available under the provisions of 37 CFR 1.1 SIX (6) MONTHS from the mailing date of this communication. Period for reply is specified above, the maximum statutory period for reply within the set or extended period for reply will, by statute reply received by the Office later than three months after the mailing and patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be timwill apply and will expire SIX (6) MONTHS from a cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).			
Status						
1)🖾	Responsive to communication(s) filed on <u>02 Ja</u>	anuary 2007.				
2a)⊠	This action is FINAL . 2b) ☐ This	action is non-final.				
3) 🗌	·—					
closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.						
Dispositi	on of Claims					
4)🖂	4)⊠ Claim(s) <u>1-34</u> is/are pending in the application.					
4a) Of the above claim(s) <u>4</u> is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
•	6)⊠ Claim(s) <u>1-34</u> is/are rejected.					
	Claim(s) is/are objected to.					
8)	Claim(s) are subject to restriction and/o	or election requirement.	• .			
Applicati	on Papers					
9)	The specification is objected to by the Examine	er.				
10)	The drawing(s) filed on is/are: a) acc	epted or b) objected to by the	Examiner.			
	Applicant may not request that any objection to the	•				
11)	Replacement drawing sheet(s) including the correct The oath or declaration is objected to by the Ex					
Priority u	ınder 35 U.S.C. § 119	•	•			
12)	Acknowledgment is made of a claim for foreign ☐ All b)☐ Some * c)☐ None of:	,)-(d) or (f).			
1. Certified copies of the priority documents have been received.						
	2. Certified copies of the priority document3. Copies of the certified copies of the priority					
	 Copies of the certified copies of the prio application from the International Burea 		ed in this National Stage			
* See the attached detailed Office action for a list of the certified copies not received.						
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Attachmen	ot(s)	•	•			
1) 🛛 Notic	ce of References Cited (PTO-892)	4) Interview Summary				
3) Infor	ce of Draftsperson's Patent Drawing Review (PTO-948) mation Disclosure Statement(s) (PTO/SB/08) er No(s)/Mail Date	Paper No(s)/Mail D 5) Notice of Informal F 6) Other:				

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DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

 Claims 1-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, each independent claim—claims 7, 19 and 28—recites, "a housing...structured to mount in or about an ear of a person." Alleged support comes from page 5, lines 16-20, and page 20, lines 8-11.

Page 5 discloses "a miniaturized housing for use in locations having limited space" and equivocates such a housing with "a hearing aid." Unfortunately, this fails to rise to an implication of an ear-level hearing aid. First, the term miniature is a relative degree, and is not given any meaningful point of reference in the specification. Second, hearing aids are widely varied, and comprise housings that can be worn in or about an ear as well as housings that are worn on other parts of the body. Sometimes, the hearing aids are not even worn. See, for instance, US Patent 2,017,358.

Page 20 indicates "for a system such as a hearing aid, the functionality of these systems is enhanced through manufacturing these systems with components that can be configured with arrangements that reduce the amount of area and/or volume used by

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components required to operate the system." At most, this statement implies that smaller is better in hearing aids, but falls short of specifying the placement of a hearing aid.

Therefore, claims 1-34 recite new matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 1-7, 10, 16, 19, 21, 25 and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penn (US Patent 2,140,969) in view of Cohen et al. (US Patent 4,204,036) and further in view of Hollingsworth (US Patent 2,930,857).

Claim 7 is limited to "a hearing aid." Penn discloses a hearing aid apparatus that corresponds to the recited "system." In the embodiment of figure 2 a plurality of "electronic devices" including devices 10, 12, 12a and 13 receive "different supply voltages" provided by batteries 15, 19, 20, 24 and others not specifically labeled. Figure 2 clearly depicts that a respective battery provides each different supply voltage instead of "a single supply source having multiple voltage taps to provide the different supply voltages." However, this deficiency is overcome by an obvious modification.

In particular, Cohen teaches a multiple duty battery that, as described in the Abstract, provides different voltages by providing electrical access to intermediate cells

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within the battery by conductive metal terminal layers. These layers correspond to the "multiple voltage taps" recited. Clearly, a single battery with a plurality of voltage providing cells generates a plurality of voltages without "up-converting" or "down-converting." Cohen further teaches that the multiple duty battery is advantageous in replacing multiple single duty batteries for use in a portable device, e.g. a hearing aid. See column 1, lines 4-50.

Claim 7 further requires "a housing containing the plurality of electronic devices and the single-supply source, the housing structured to mount in or about an ear of a person." Penn simply does not disclose the type of housing used for his hearing aid. Again, an obvious modification is required.

Hollingsworth discloses "a housing" for a hearing aid, namely the spectacles seen in figures 1-8, "containing the plurality of electronic devices and the...supply source," as seen in figures 3 and 4, "the housing structured to mount in or about an ear of a person" by virtue of the fact that they are spectacles. See figures 1 and 2. Comparing figure 9 of Hollingsworth to figure 2 of Penn makes it clear that incorporating the hearing aid of Penn into the spectacles housing of Hollingsworth is feasible.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace multiple batteries of a hearing aid with a single multiple duty battery as taught by Cohen for the purpose of simplifying the construction and reducing the size of the hearing aid. Moreover, it would have been obvious to embody the hearing aid apparatus of Penn in a pair of spectacles as taught by Hollingsworth simply because Penn fails to describe how one would contain the hearing aid and because

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Hollingsworth spectacles serve as an inconspicuous hearing aid. See column 1, lines 15-29.

Claim 2 is limited to "the hearing aid of claim 1," as covered by Penn in view of Cohen and further in view of Hollingsworth. As shown apropos the rejection of claim 1, Cohen teaches a multiple duty "battery" with conductive metal terminals (i.e. "multiple voltage taps"). These terminals are depicted, for example, in figure 5 as elements 24, 25 and 28. See column 4, line 12, through column 5, line 45. Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 3 is limited to "the hearing aid of claim 2," as covered by Penn in view of Cohen and further in view of Hollingsworth. Figure 5 depicts a plurality of "battery regions" that each include a cathode 31 and an anode 32. The "battery regions" are stacked on a "common substrate" corresponding to element 30. Alternatively, the "common substrate" corresponds to element 25. Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 1 is limited to "the hearing aid of claim 3," as covered by Penn in view of Cohen and further in view of Hollingsworth. Element 25, which is integral with sheet 37, is made of "aluminum." See Cohen, column 4, lines 55-60. Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 4 is limited to "the hearing aid of claim 3," as covered by Penn in view of Cohen and further in view of Hollingsworth. In the initial sense indicated apropos the rejection of claim 3, the "common substrate" corresponds to element 30, a plastic current collector that is "rigidly" fixed in the planar configuration seen in figure 5.

Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 5 is limited to "the hearing aid of claim 3," as covered by Penn in view of Cohen and further in view of Hollingsworth. In the alternative sense indicated apropos the rejection of claim 3, the "common substrate" corresponds to element 25, a flexible piece of steel "folded" into the configuration seen in figure 5. Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 6 is limited to "the hearing aid of claim 3," as covered by Penn in view of Cohen and further in view of Hollingsworth. In the alternative sense indicated apropos the rejection of claim 3, the "common substrate" corresponds to element 25, a flexible piece of steel "rolled" over frame 34 in the manner seen in figure 5. Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 10 is limited to "the hearing aid of claim 7," as covered by Penn in view of Cohen and further in view of Hollingsworth. Note that figure 3 of Penn illustrates batteries with one, two, three and four cells. Therefore, figure 3 of Penn clearly illustrates the need for at least four different voltages. As a result, it would have been obvious to one of ordinary skill in the art at the time of the invention to design the battery of Cohen to provide four voltages, necessitating four taps and four regions, for the purpose of meeting the voltage requirements of Penn.

Claim 16 is limited to "the hearing aid of claim 7," as covered by Penn in view of Cohen and further in view of Hollingsworth. The hearing aid of Penn clearly includes "a

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microphone" 10, "a signal processor" including elements 12, 17 and 18 and "an amplifier" 12a. As seen in figure 3 of Penn, each element listed above receives a different voltage, such that the different voltage taps of the battery taught by Cohen will power each different element. Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 19 is limited to "a hearing aid." Penn discloses a hearing aid apparatus that corresponds to the recited "system." In the embodiment of figure 2 a plurality of "electronic devices" including devices 10, 12, 12a and 13 receive "different supply voltages" provided by batteries 15, 19, 20, 24 and others not specifically labeled. Figure 2 clearly depicts that a respective battery provides each different supply voltage instead of "a single supply source having multiple voltage taps to provide the different supply voltages." However, this deficiency is overcome by an obvious modification.

In particular, Cohen discloses "a substrate" (lower end of 24), "a plurality of battery regions" including cathodes 31 and anodes 32; "a plurality of buffer regions" 15; and "a plurality of voltage taps" 25, 28 and the upper end of 24.

Claim 7 further requires "a housing containing the plurality of electronic devices and the single-supply source, the housing structured to mount in or about an ear of a person." Penn simply does not disclose the type of housing used for his hearing aid. Again, an obvious modification is required.

Hollingsworth discloses "a housing" for a hearing aid, namely the spectacles seen in figures 1-8, "containing the plurality of electronic devices and the...supply source," as seen in figures 3 and 4, "the housing structured to mount in or about an ear

of a person" by virtue of the fact that they are spectacles. See figures 1 and 2.

Comparing figure 9 of Hollingsworth to figure 2 of Penn makes it clear that incorporating the hearing aid of Penn into the spectacles housing of Hollingsworth is feasible.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace multiple batteries of a hearing aid with a single multiple duty battery as taught by Cohen for the purpose of simplifying the construction and reducing the size of the hearing aid. Motivation to do so comes explicitly from Cohen. See column 1, lines 4-50. Moreover, it would have been obvious to embody the hearing aid apparatus of Penn in a pair of spectacles as taught by Hollingsworth simply because Penn fails to describe how one would contain the hearing aid and because Hollingsworth spectacles serve as an inconspicuous hearing aid. See column 1, lines 15-29.

Claim 21 is limited to "the battery of claim 19," as covered by Penn in view of Cohen and further in view of Hollingsworth. Figure 5 clearly depicts that metal substrate 24 is flexible and folded about the battery regions. Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 25 is limited to "the battery of claim 19," as covered by Penn in view of Cohen and further in view of Hollingsworth. Cohen discloses a reference contact 6 that is common to all battery regions. Therefore, Penn in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 28 is limited to "a method of manufacturing a hearing aid." It was shown apropos the rejection of claim 7 that it is obvious to provide electronic devices configured to operate under a different supply voltage and a single supply source to

provide said supply voltages without up-converting or down-converting a voltage.

However, Penn, which is directed towards a hearing aid, is silent regarding the absolutely necessary process of hearing aid manufacture. Therefore, Penn in view of Cohen fail to make obvious "mounting a number of electronic devices into a housing of a hearing aid." However, this deficiency is overcome by an obvious modification.

As noted in the previous paragraph, Penn fails to specify a method of hearing aid manufacture. Furthermore, Penn fails to even specify a particular housing for the hearing aid disclosed therein. These deficiencies may be simply overcome by choosing any suitable hearing aid housing and manufacturing method. In this way, the hearing aid taught by Hollingsworth provides "a housing" for a hearing aid, namely the spectacles seen in figures 1-8, "containing the plurality of electronic devices and the...supply source," as seen in figures 3 and 4, "the housing structured to mount in or about an ear of a person" by virtue of the fact that they are spectacles. See figures 1 and 2. Comparing figure 9 of Hollingsworth to figure 2 of Penn makes it clear that incorporating the hearing aid of Penn into the spectacles housing of Hollingsworth is feasible.

It would have been obvious to one of ordinary skill in the art at the time of the invention to embody the hearing aid apparatus of Penn in a pair of spectacles as taught by Hollingsworth simply because Penn fails to describe how one would contain the hearing aid and because Hollingsworth spectacles serve as an inconspicuous hearing aid. See column 1, lines 15-29.

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Claims 29-33 are directed towards essentially the same subject matter as claims 2-6, and are rejected for the same reasons.

3. Claims 12, 14, 17, 18 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penn in view of Cohen and further in view of Saaski et al. (US Patent 6,310,960).

Claim 12 is limited to "the hearing aid of claim 7," as covered by Penn in view of Cohen and further in view of Hollingsworth. Penn is silent regarding "a battery recharge control." However, this deficiency is overcome by an obvious modification.

In particular, Saaski teaches a rechargeable hearing aid system as stated in the Abstract. The Abstract indicates that the recharging circuit is applicable to batteries with multiple cells, such as the one taught by Cohen. The battery recharge control of Saaski is depicted in figures 5 and 6. See column 14, line 18, through column 16, line 8.

It would have been obvious to one of ordinary skill in the art at the time of the invention to (1) design the battery of Cohen to be rechargeable and (2) provide a battery recharge control as taught by Saaski for the purpose of overcoming problems inherent in using disposable batteries. See Saaski column 1, line 63, through column 2, line 36.

Claim 14 is limited to "the hearing aid of claim 12," as covered by Penn in view of Cohen in view of Hollingsworth and further in view of Saaski. Saaski discloses a voltage regulator that provides a design charging voltage in column 16, lines 3-8. The circuitry (not shown) that provides this function corresponds to "a number of voltage regulators" as recited, wherein the number is one. Therefore, Penn in view of Cohen in view of Hollingsworth and further in view of Saaski makes obvious all limitations of the claim.

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Claim 17 is limited to "the hearing aid of claim 7," as covered by Penn in view of Cohen and further in view of Hollingsworth. Penn is silent regarding "one or more regulators." However, this deficiency is overcome by an obvious modification.

Saaski teaches regulating one battery voltage in figure 7. See column 16, lines 30-50. The regulator functions to maintain a constant DC voltage output regardless of the amount of power discharged by the battery.

It would have been obvious to one of ordinary skill in the art at the time of the invention to regulate the output of at least one battery voltage provided by one tap of a battery as taught by Saaski for the purpose of maintaining a constant DC voltage regardless of the amount of power discharged by the battery.

Claim 18 is limited to "the hearing aid of claim 7," as covered by Penn in view of Cohen and further in view of Hollingsworth. The recharging circuit of Saaski mentioned apropos the rejection of claim 12 operates at a voltage of about 3-8 volts. See column 15, lines 6-7.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the recharging circuit as taught by Saaski for the same reasons apropos the rejection of claim 12.

Claim 34 is limited to "the method of claim 29," as covered by Penn in view of Cohen and further in view of Hollingsworth. The recharging circuit of Saaski mentioned apropos the rejection of claim 12 operates at a voltage of about 3-8 volts. See column 15, lines 6-7.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the recharging circuit as taught by Saaski for the same reasons apropos the rejection of claim 12.

4. Claims 19-24, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Penn in view of LaFollette et al. (US Patent 6,610,440) in view of Cohen and further in view

of Hollingsworth (US Patent 2,930,857).

Claim 19 is limited to "a hearing aid." Penn discloses a hearing aid apparatus that corresponds to the recited "system." In the embodiment of figure 2 a plurality of "electronic devices" including devices 10, 12, 12a and 13 receive "different supply voltages" provided by batteries 15, 19, 20, 24 and others not specifically labeled. Figure 2 clearly depicts that a respective battery provides each different supply voltage instead of "a single supply source having multiple voltage taps to provide the different supply voltages." However, this deficiency is overcome by an obvious modification.

In particular, LaFollette discloses microscopic batteries for MEMS systems. See Abstract. As seen in, for example, figure 10 a battery includes a plurality of micro cells that corresponds to "a plurality of battery regions" disposed on a silicon substrate, such as the substrate 32 seen in figure 6. The cross-section of figure 6 depicts polyimide spacers 38' (i.e. buffer regions) that separate each electrolyte/micro cell (i.e. battery region). Both figure 6 and figure 10 illustrate a plurality of electrodes that serve as "a plurality of voltage taps." As seen in figure 10, each cell has a tap. See column 25, line 20, through column 26, line 36.

Claim 7 further requires "a housing containing the plurality of electronic devices and the single-supply source, the housing structured to mount in or about an ear of a person." Penn simply does not disclose the type of housing used for his hearing aid. Again, an obvious modification is required.

Hollingsworth discloses "a housing" for a hearing aid, namely the spectacles seen in figures 1-8, "containing the plurality of electronic devices and the...supply source," as seen in figures 3 and 4, "the housing structured to mount in or about an ear of a person" by virtue of the fact that they are spectacles. See figures 1 and 2. Comparing figure 9 of Hollingsworth to figure 2 of Penn makes it clear that incorporating the hearing aid of Penn into the spectacles housing of Hollingsworth is feasible.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace multiple batteries of a hearing aid with a single multiple duty battery as taught by LaFollette for the purpose of simplifying the construction and reducing the size of the hearing aid. Motivation to do so comes explicitly from Cohen. See column 1, lines 4-50. Moreover, it would have been obvious to embody the hearing aid apparatus of Penn in a pair of spectacles as taught by Hollingsworth simply because Penn fails to describe how one would contain the hearing aid and because Hollingsworth spectacles serve as an inconspicuous hearing aid. See column 1, lines 15-29.

Claim 20 is limited to "the battery of claim 19," as covered by Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth. LaFollette discloses that the substrate 32 is "rigid." See column 13, lines 9-35. Therefore, Penn in view of

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LaFollette in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 21 is limited to "the battery of claim 19," as covered by Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth. LaFollette discloses that the substrate is "flexible" and spirally-wound (i.e. "folded"). See column 13, lines 9-35, and figure 16. Therefore, Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 22 is limited to "the battery of claim 19," as covered by Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth. LaFollette discloses that the substrate is "flexible" and spirally-wound (i.e. "rolled"). See column 13, lines 9-35, and figure 16. Therefore, Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 23 is limited to "the battery of claim 19," as covered by Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth. LaFollette depicts at least three battery regions in figure 10. Therefore, Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 24 is limited to "the battery of claim 19," as covered by Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth. The voltages provided by the micro cells depicted in figure 10 of LaFollette are approximately 1.3V, 2.6V and 3.8V. Therefore, Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

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Claim 26 is limited to "the battery of claim 19," as covered by Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth. Figure 10 of LaFollette clearly depicts that each battery region has its own "reference contact." Therefore, Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Claim 27 is limited to "the battery of claim 19," as covered by Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth. LaFollette disclose that each micro cell is "rechargeable." See column 15, lines 29-38. Therefore, Penn in view of LaFollette in view of Cohen and further in view of Hollingsworth makes obvious all limitations of the claim.

Response to Arguments

Applicant's arguments with respect to claims 1-34 have been considered but are most in view of the new ground(s) of rejection.

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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